Technological Advances and Opportunities for the Development of Sustainable Biorefineries

Mussatto, Solange I.

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Short introductive summary:

Moving to a more sustainable economy, where renewable biomass is used to produce fuels, chemicals, energy and materials, is one of the main challenges faced by the society nowadays in order to ensure a sustainable low-carbon economy for the future. In addition, a bio-based economy has the potential to generate new jobs and new opportunities for entrepreneurship, with further benefits to the global economy and the society. Biomass can be used to replace fossil feedstocks for the production of different products, among of which, chemicals are particularly very attractive due to their high market value. This creates abundant growth opportunities for the chemical industries. In this sense, the development of biorefineries to produce chemicals and energy from biomass is a strategy that has been strongly considered in order to have a significant impact in the final commodity prices. Although substantial steps have been taken in recent years into the transition towards a bio-based economy, there are still significant technological challenges to overcome in order to develop more efficient, advanced and sustainable bio-based processes, able to compete with the optimized petrochemical production chains currently available. Moreover, not only technological development, but also process integration and environmental impact analyses must be considered in the design and implementation of future sustainable biorefineries. The most recent technological advances and opportunities for the development of sustainable biorefineries will be presented and discussed in this presentation.

Presenter: **Solange MUSSATTO, Technical University of Denmark, Novo Nordisk Foundation Center for Biosustainability, Kongens Lyngby, DENMARK**

Presenter's biography:

Solange Mussatto is Head of a Research Group at the Technical University of Denmark. She has over 18 years of expertise in the areas of Biomass Pretreatment and Fermentation Technology with focus on the development of processes for a sustainable conversion of biomass into bio-based products.

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